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$$f(x,y)=|d_v|^3(x,y)+|d_H|^3(x,y)$$

and

$$W=\Sigma f(x,y)$$

where d_v and d_H are differences in intensity of neighboring pixels in vertical and horizontal directions respectively, W is edge strength and summation is over said portion;

determining an orientation of said predetermined pixel intensity arrangement;

positioning said templates in alignment with said predetermined pixel intensity arrangement in accordance with said orientation determined by said orientation determination means; and

comparing said plurality of templates to said predetermined pixel intensity arrangement.

9. The method according to claim 8, wherein an examined portion is discarded if its edge strength does not exceed a preselected threshold.

10. The method according to claim 8, wherein the step of determining comprises determining edge orientation ϕ in accordance with the following equations:

$$x_0=\{\Sigma f(x,y)x\}/W$$

and

$$y_0=\{\Sigma f(x,y)y\}/W$$

wherein x and y are the coordinates of each of said pixel intensity arrangement,

$f(x,y)=|d_v|^3(x,y)+|d_H|^3(x,y)$, where d_v and d_H are differences in intensity of neighboring pixels of said pixel intensity arrangement, $W=\Sigma f(x,y)$ over said pixel intensity arrangement, and

$$\phi=\theta+0.5\pi, \text{ if } \epsilon \geq 0.5$$

and

$$\phi=\theta \text{ if } \epsilon < 0.5$$

where

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$$\theta=0.5 \tan^{-1} (2M_{xy}/M_x M_y)$$

$$\epsilon=(M_x \sin^2 \theta + M_y \cos^2 \theta + 2M_{xy} \sin \theta \cos \theta)/(M_x + M_y)$$

5 where M_x , M_y and M_{xy} refer to second order moments defined as

$$M_x=\Sigma f(x,y)(x-x_0)^2$$

$$M_y=\Sigma f(x,y)(y-y_0)^2$$

10 and

$$M_{xy}=\Sigma f(x,y)(x-x_0)(y-y_0)^2$$

15 and summation is over a circular area preselected diameter center at (x_0, y_0) .

11. The method according to claim 10, wherein said preselected diameter is 8 pixels.

12. The method according to claim 10, wherein the step of aligning comprises rotation of said templates according to the following equations:

$$x'=x \cos \phi + y \sin \phi$$

and

$$y'=-x \sin \phi + y \cos \phi$$

25 where (x,y) and (x',y') are coordinates of a pixel before and after rotation respectively.

13. The method according to claim 8, wherein the step of comparing comprises determining matching strength r in accordance with the following equation:

$$r = \frac{\Sigma v(x,y)t(x,y)}{\sqrt{\Sigma v^2(x,y)} \sqrt{\Sigma t^2(x,y)}}$$

35 where $v(x,y)$ and $t(x,y)$ are intensity values at (x,y) in a smoothed platen image and template image respectively, and summation is over template size.

14. An anti-counterfeit detector according to claim 13, wherein a match is indicated by r being greater than a preset threshold.

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